

What is claimed is:

1. A multi-gradation display apparatus using a pulse width modulation (PWM) method, comprising:

5 a plurality of channels;

a plurality of input means for outputting a plurality of N-bit image codes in response to a gray scale of an image, wherein N is a positive integer;

10 a pulse width modulation generator for outputting first and second gray scale pulses, each having 2^N edges in response to the bit number of N-bit image codes; and

a plurality of count controllers, each selecting an edge of the first or second gray scale pulse in response to the N-bit image code to output a driving pulse having a pulse width
15 from an initial point to the edge of the first or second gray scale pulse to the plurality of channels,

wherein the second gray scale pulse is complementary with the first gray scale pulse.

20 2. The multi-gradation display apparatus as recited in claim 1, wherein the number of channels corresponds to the number of pixel columns included in the multi-gradation display apparatus.

25 3. The multi-gradation display apparatus as recited in claim 1, wherein the count controller checks and counts only rising edges of the first and second gray scale pulses in order to select the rising edge in response to the N-bit image code.

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4. The multi-gradation display apparatus as recited in claim 1, wherein the count controller checks and counts only

falling edges of the first and second gray scale pulses in order to select the falling edge in response to the N-bit image code.

5 5. A multi-gradation display apparatus using a pulse width modulation (PWM) method, comprising:

 a plurality of channels;

 a plurality of input means for outputting a plurality of N-bit image codes in response to a gray scale of an image,

10 wherein N is a positive integer;

 a pulse width modulation generator for outputting a gray scale pulse having 2^N edges in response to the bit number of N-bit image code; and

 a plurality of count controllers, each selecting an edge
15 of the gray scale pulse in response to the N-bit image code to output a driving pulse having a pulse width from an initial point to the edge of the first or second gray scale pulse to the plurality of channels.

20 6. The multi-gradation display apparatus as recited in claim 5, wherein the count controller checks and counts rising and falling edges of the gray scale pulses in order to select the falling edge in response to the N-bit image code.

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